

In The Claims:

1. (Currently Amended) A system for controlling a brake-based safety system of an automotive vehicle comprising:

a transition first controller generating a first control signal corresponding to a first control level;

a proportional-derivative ~~second~~ controller generating a second control signal corresponding to a second control level;

an arbitration module coupled to the transition first controller and the proportional-derivative ~~second~~ controller, said arbitration module comparing the first control level and the second control level and then selecting choosing the higher of the first control signal or [[and]] the second control signal corresponding to a higher control level as [[to]] a final control signal; and

the safety system coupled to the arbitration module, said safety system operated corresponding to the final control signal.

2-3. (Cancelled)

4. (Currently Amended) A system as recited in claim 1 wherein the proportional-derivative ~~second~~ controller comprises a proportional-integral derivative controller.

5. (Original) A system as recited in claim 1 wherein the second controller comprises a proportional-integral-derivative-double derivative controller.

6. (Original) A system as recited in claim 1 wherein the first signal and the second control signal comprise pressure signals.

7. (Original) A system as recited in claim 1 wherein the first signal and the second control signal comprise pressure request signals.

8. (Original) A system as recited in claim 1 wherein the safety system comprises a rollover control system.

9. (Currently Amended) A system of operating a rollover control system of an automotive vehicle comprising:

a transition ~~first~~ controller generating a first pressure control signal;
a pressure-derivative ~~second~~ controller generating a second pressure control signal;
an arbitration module coupled to the transition ~~first~~ controller and the pressure-derivative ~~second~~ controller, said arbitration module choosing ~~the higher of~~ the first pressure control signal or ~~or~~ ~~[[and]]~~ the second pressure control signal corresponding to a higher pressure as ~~[[to]]~~ a final pressure control signal; and
the rollover control ~~safety~~ system coupled to the arbitration module, said rollover control ~~safety~~ system operated with the final pressure control signal.

10-11. (Cancelled)

12. (Currently Amended) A system as recited in claim 9 wherein the pressure-derivative ~~second~~ controller comprises a proportional-integral derivative controller.

13. (Currently Amended) A system as recited in claim 9 wherein the pressure-derivative ~~second~~ controller comprises a proportional-integral-derivative-double derivative controller.

14. (Cancelled)

15. (Currently Amended) A system as recited in claim 9 wherein the first pressure control signal and the second pressure control signal comprise pressure request signals.

16. (Cancelled)

17. (Currently Amended) A method of controlling a hydraulic safety system of an automotive vehicle comprising:

determining a ~~an~~ ~~angular~~ vehicle roll angle ~~position~~;
in a transition ~~first~~ controller generating a first control signal; ~~[[and]]~~
when the roll angle ~~angular~~ ~~position~~ is greater than a threshold, generating a second control signal from a proportional-derivative ~~second~~ controller ;

comparing a first control level of the first control signal and a second control level of the second control signal to obtain a final control signal corresponding to a higher control level of the first control signal or the second control signal; and
controlling the hydraulic safety system in response to the final control signal.

18. (Original) A method as recited in claim 17 wherein the threshold corresponds substantially to a linear region and non-linear region.

19. (Cancelled)

20. (Currently Amended) A method as recited in claim 17 wherein the roll angle ~~angular position~~ corresponds to two-wheel lift.

21. (Currently Amended) A method as recited in claim 17 wherein roll angle ~~angular position~~ is inferred by a requested PID signal.

22. (Original) A method of operating a safety system in an automotive vehicle comprising:

in a non-divergent region of dynamics of the vehicle, operating the safety system with a transition controller; and

in a divergent region of dynamics of the vehicle, operating the safety system with a proportional-derivative controller.

23. (Original) A method as recited in claim 22 wherein the proportional-derivative controller comprises a PID controller.

24. (New) A system as recited in claim 1 wherein the arbitration module weights the first control signal and the second control signal prior to comparing.

25. (New) A system as recited in claim 9 wherein the arbitration module weights the first pressure control signal and the second pressure control signal prior to comparing.

26. (New) A system as recited in claim 1 wherein the safety system comprises a brake-based safety system.